

# SAFETY

## IN NUMBERS

### Sober Driving During the Holidays

Of all the people who died in motor vehicle crashes during 2012, 31 percent died in crashes involving a drunk driver, and this percentage remains unchanged for the past 10 years. During the six major holiday periods, however, 40 percent of motor vehicle crash fatalities involve a drunk driver. In just the few days surrounding Christmas and New Year's Eve, an average of 304 people die in drunk-driving crashes.

The three to four days around each holiday generally find more people on the roads, many attending and returning home from celebrations of one sort or another. There are more motor vehicle deaths during these times and the proportion of drivers and motorcycle riders who are legally drunk\* exceeds the annual average.

Many people try to calculate their blood alcohol concentrations (BACs) after drinking – it's not so simple. It involves the number of drinks consumed, and the type of drink, the size of the glass, your body weight and gender, the elapsed time, the amount and kind of food in your stomach, and health conditions you may have. Driving with a BAC at zero is the only absolute safe level. The best advice is not to drive after drinking.

\*Drivers are considered alcohol-impaired when their BACs are .08 g/dL or higher, the illegal per se alcohol limit in every State. Drivers under 21 may not drive after consuming any alcohol because of Zero Tolerance Laws. An officer who has probable cause to suspect an impaired driver based on driving behavior may arrest or cite any driver at BACs below .08 in every State.

For more information, visit:

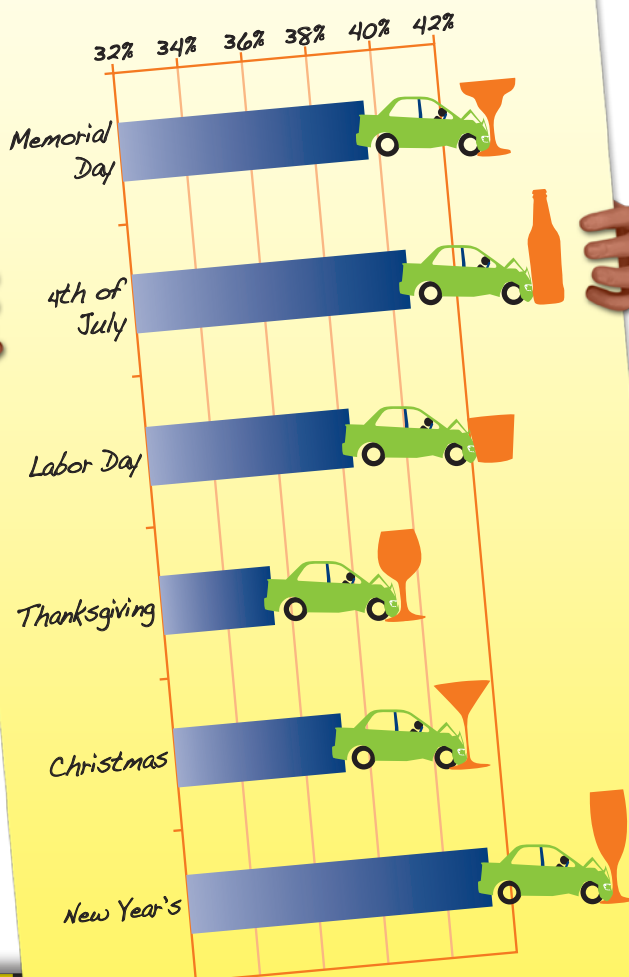
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National Highway Traffic Safety  
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*Percentage of fatalities that are alcohol-related on 6 holidays, 10-year average, NCSA.*



# THE PROBLEM

## Container SIZE & TYPE of beverage matter

**1 Standard Drink = 0.6 oz of alcohol**

(about 14 grams of pure alcohol)



The number of standard drinks in 12 oz of each of these beverages.

**BEER (12 oz)**  
5% ABV

**MALT LIQUOR (12 oz)**  
10% ABV

Malt liquor is about 7% alcohol (12 oz equals about 1.4 standard drinks).

**WINE (12 oz)**  
12-18% ABV

Wine is about 12-14% alcohol (12 oz equals about 2.9 standard drinks; white = 12%, red = 14%, fortified = 18%).

**80-proof SPIRITS (12 oz)**  
40% ABV

ABV = Alcohol by volume

## What data tells us

- BAC is the amount of alcohol in a person's body, measured by the weight of the alcohol (ethyl alcohol or ethanol) in a certain volume of blood – the blood alcohol concentration.
- Alcohol travels quickly in the body and will show up when measured in your blood or breath in as little as a half hour after you had the drink, and continues to rise for about an hour after the last drink.
- Alcohol affects the central nervous system and interferes with sensory information processing. These effects show up as slurred speech, blurred vision, loss of balance, and loss of judgment.
- More drinks lead to higher BACs. Alcohol consumed quickly will lead to higher BACs compared to the same number of drinks spaced over a longer period of time.
- It takes the body about one hour on average to reduce the BAC by .015 and there is no way to speed the rate your body metabolizes the alcohol. The liver handles about 90 percent of the alcohol; urine, breath, and perspiration dispel the rest.
- Women, who typically weigh less than men, reach higher BACs with the same number of drinks as men. Women's bodies generally have less water and more body fat, so more alcohol remains in the blood of women.
- Drugs – prescription, over-the-counter, and illegal – can impair perception, judgment, motor skills, and memory. While drugs will not change your BAC, combining drugs with alcohol may increase your level of impairment and affect your ability to perform driving tasks safely ([www.drugabuse.gov/publications/drugfacts/drugged-driving](http://www.drugabuse.gov/publications/drugfacts/drugged-driving)).

## Myths and misconceptions about alcohol

**A cup of coffee or a cold shower will sober you up.** Only time will reduce the alcohol in your body as your liver takes time to metabolize it. Caffeine and cold showers may wake you up, but they won't undo any of the effects of alcohol.

**Alcohol is a stimulant.** Actually, alcohol is a depressant and, at high levels, can paralyze the respiratory system and cause death. At low levels, alcohol causes drowsiness, reduces inhibitions, and affects your vigilance, balance, coordination, and reaction time, among other things, all of which affect your ability to drive safely.

**I know when I'm too drunk to drive.** Your perception of your own physical state and your judgment are two of the first things alcohol impairs, starting at a BAC of .02. Your risk of being in a crash increases after the first drink, and is highest among underage and young adult drivers. Young males 21 to 34 account for almost half (45%) of drinking drivers with BAC levels at .08 g/dL or higher.

**If I don't have anything to drink in the last hour before I drive home, I'll be okay.**

Well, that depends on what your BAC is. Each hour, your BAC will go down about .015 (not one drink per hour). It may take longer than an hour to clear your system.

**I can't be convicted for driving under .08 BAC.** Officers in every State can arrest or cite you for impaired driving at any BAC level, which can lead to a drunk-driving conviction on your driving record.

**I drive more carefully after I've been drinking.** You are the only one who believes that. Just ask your friends. Remember that alcohol affects your judgment. Officers pick up cues impaired drivers give while driving – like driving too slowly or too fast, stopping too far back from stop signs or stoplights, and weaving. These and other behaviors give an officer probable cause to make a stop and give you a Standardized Field Sobriety Test.

# THE FACTS

## Typical Effects and Predictable Effects of BAC on Driving

The ABCs of BAC: A Guide to Understanding Blood Alcohol Concentration and Alcohol Impairment ([www.nhtsa.gov/links/sid/ABCsBACWeb/index.htm](http://www.nhtsa.gov/links/sid/ABCsBACWeb/index.htm))

Blood Alcohol Concentration	Typical Effects	Predictable Effects on Driving
<b>.02%</b>	<ul style="list-style-type: none"> <li>Some loss of judgment</li> <li>Relaxation</li> <li>Slight body warmth</li> <li>Altered mood</li> </ul>	<ul style="list-style-type: none"> <li>Decline in visual functions (rapid tracking of a moving target)</li> <li>Decline in ability to perform two tasks at the same time (divided attention)</li> </ul>
<b>.05%</b>	<ul style="list-style-type: none"> <li>Exaggerated behavior</li> <li>May have loss of small-muscle control (focusing your eyes)</li> <li>Impaired judgment</li> <li>Usually good feeling</li> <li>Lowered alertness</li> <li>Release of inhibition</li> </ul>	<ul style="list-style-type: none"> <li>Reduced coordination</li> <li>Reduced ability to track moving objects</li> <li>Difficulty steering</li> <li>Reduced response to emergency driving situations</li> </ul>
<b>.08%</b>	<ul style="list-style-type: none"> <li>Muscle coordination becomes poor (balance, speech, vision, reaction time, and hearing)</li> <li>Harder to detect danger</li> <li>Judgment, self-control, reasoning, and memory are impaired</li> </ul>	<ul style="list-style-type: none"> <li>Reduced concentration</li> <li>Short-term memory loss</li> <li>Speed control</li> <li>Reduced information processing capability (signal detection, visual search)</li> <li>Impaired perception</li> </ul>
<b>.10%</b>	<ul style="list-style-type: none"> <li>Clear deterioration of reaction time and control</li> <li>Slurred speech, poor coordination, and slowed thinking</li> </ul>	<ul style="list-style-type: none"> <li>Reduced ability to maintain lane position, and brake appropriately</li> </ul>
<b>.15%</b>	<ul style="list-style-type: none"> <li>Far less muscle control than normal</li> <li>Vomiting may occur</li> <li>Major loss of balance</li> </ul>	<ul style="list-style-type: none"> <li>Substantial impairment in vehicle control, attention to driving task, and in necessary visual and auditory information processing</li> </ul>

Approximate blood alcohol concentration by body weight for each drink for men and women (sometimes called BAC Estimators). Because people vary so much, it is difficult to state precisely what a person's BAC will be after a certain number of standard drinks. These tables are general estimates based on gender and weight. BAC will be higher if drinks are consumed quickly, lower if stretched out over several hours. No matter what you do, the body clears alcohol from your system at a rate that lowers your BAC about .015 BAC per hour, not drink per hour.



### Approximate Blood Alcohol Concentration by Body Weight (in pounds) for Adult Men

Drinks	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.04	.03	.03	.02	.02	.02	.02	.02	Impairment Begins
2	.08	.06	.05	.05	.04	.04	.03	.03	
3	.11	.09	.08	.07	.06	.06	.05	.05	Driving Skills Significantly Affected
4	.15	.12	.11	.09	.08	.08	.07	.06	
5	.19	.16	.13	.12	.11	.09	.09	.08	Illegal Per Se (.08+ BAC) in All States
6	.23	.19	.16	.14	.13	.11	.10	.09	
7	.26	.22	.19	.16	.15	.13	.12	.11	
8	.30	.25	.21	.19	.17	.15	.14	.13	Alcohol Poisoning Possible
9	.34	.28	.24	.21	.19	.17	.15	.14	



### Approximate Blood Alcohol Concentration by Body Weight (in pounds) for Adult Women

Drinks	100	120	140	160	180	200	220	240	
0	.00	.00	.00	.00	.00	.00	.00	.00	Only Safe Driving Limit
1	.05	.04	.03	.03	.02	.02	.02	.02	Impairment Begins
2	.09	.08	.07	.06	.05	.05	.04	.04	
3	.14	.11	.10	.09	.08	.07	.06	.06	Driving Skills Significantly Affected
4	.18	.15	.13	.11	.10	.09	.08	.08	
5	.23	.19	.16	.14	.13	.11	.10	.09	Illegal Per Se (.08+ BAC) in All States
6	.27	.23	.19	.17	.15	.14	.12	.11	
7	.32	.27	.23	.20	.18	.16	.14	.13	
8	.36	.30	.26	.23	.20	.18	.17	.15	Alcohol Poisoning Possible
9	.41	.34	.29	.26	.23	.30	.19	.17	

Subtract .01 BAC for each 40 minutes of drinking, or about .015 BAC per hour (adapted from an NIAAA link)



# WHAT YOU CAN DO

## We know what works

NHTSA's *Countermeasures That Work* recommends effective actions that communities can take to reduce alcohol-impaired driving ([www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf](http://www.nhtsa.gov/staticfiles/nti/pdf/811727.pdf)).

## Drivers and passengers can

- Make a plan before the drinking begins so you do not exceed your limit. Alternate alcoholic and non-alcoholic beverages or water. Eat something before and during the evening because food slows your body's absorption of alcohol (but does not "soak it up"). Food does not absorb alcohol but keeps it longer in your stomach, where enzymes go to work on it. Alcohol is absorbed faster into your blood stream when it reaches the small intestines. Keep in mind that a woman's BAC will be higher with the same number of drinks as a man of the same weight.
- Designate a sober driver, enter taxi company numbers into your cell phone in case you need a ride home, know your public transportation options, arrange to stay at a friend's house, or book a hotel before the event.
- Designate a sober friend to accompany you home if you will be walking or bicycling impaired.
- Never accept a ride with an impaired driver and don't let your friends drive drunk.

- Wear your seat belt; it is your best defense in a crash. Be alert for impaired drivers at night and on weekends.
- Be aware that law enforcement will be stepping up alcohol enforcement during the holidays. Report drunk drivers to your local police.

## Hosts can

- Take action to prevent guests from driving after drinking too much – serve plenty of food, non-alcoholic beverages, and less alcohol, collect car keys, designate sober drivers, stop serving alcohol an hour before the party ends, and be prepared to call a taxi, provide sleeping accommodations, or drive them home yourself.
- Remember that social host liability laws may hold you responsible for parties where underage people drink, regardless of who furnishes the alcohol and you may be held legally responsible for your guests' behavior after they leave your party.
- Consider holding parties at a restaurant or facility with professional alcohol servers who can deal with people who may have had too much to drink. Take steps to limit your liability.

## Retailers can

- Make sure that wait staff and retail store clerks have completed alcohol server training. Post your establishment's policy and State's

laws in a conspicuous place with each employee's signature on it.

- Use separate types of glassware to tell alcoholic drinks from non-alcoholic drinks. When an underage patron moves from one station to another, servers should alert each other.
- Require ID of anyone who appears to be under 30 and post educational material reminding customers not to drive if they are impaired.
- Be aware of alternative transportation options and make them available to your customers.
- Provide rewards to your employees who engage in efforts to ensure safety.

## States and communities can

- Implement a Designated Driver program. See *Designated Driver/ Safe Ride Program* ([www.nhtsa.gov/people/injury/alcohol/DesignatedDriver/index.html](http://www.nhtsa.gov/people/injury/alcohol/DesignatedDriver/index.html)).
- Conduct No Refusal Weekends; see *No Refusal Weekend Toolkit* for suggestions ([www.trafficsafetymarketing.gov/CAMPAIGNS/Drunk+Driving/Drive+Sober+or+Get+Pulled+Over/No+Refusal+Toolkit](http://www.trafficsafetymarketing.gov/CAMPAIGNS/Drunk+Driving/Drive+Sober+or+Get+Pulled+Over/No+Refusal+Toolkit)).
- Expand the use of ignition interlock devices. See [www.nhtsa.gov/staticfiles/nti/pdf/811594.pdf](http://www.nhtsa.gov/staticfiles/nti/pdf/811594.pdf).

For more information, visit:

[www.TrafficSafetyMarketing.gov/HolidaySeason2013](http://www.TrafficSafetyMarketing.gov/HolidaySeason2013)

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